

AMENDMENTS TO THE CLAIMS

Please amend the claims as shown below. A complete listing of the claims, including their current status, is set forth below.

1. **(Currently Amended)** A method for forming an array assay chamber that is sealed by a gasket, said method comprising:

treating a backing element comprising a gasket ~~with at least one of: (1) depositing SiO₂ on said gasket, (2) contacting said gasket with at least one of a liquid phase and a vapor phase, (3) by~~ contacting said backing element comprising said gasket with plasma, to provide a treated surface of said gasket and a treated surface of said backing element, and

joining said backing element to a microarray substrate to produce an array assay chamber that is sealed by said treated surface of said gasket and comprises at least one addressable array on said microarray substrate, wherein said treated surface of said backing element is exposed to the interior of said array assay chamber.

2.-17. (Canceled)

18. **(Previously Presented)** The method of Claim 1, wherein said plasma is produced from a gas selected from the group consisting of nitrogen, air, argon, oxygen, nitrous oxide, helium, water vapor, carbon dioxide, methane, and combinations thereof.

19.-26. (Canceled)

27. **(Previously Presented)** The method of Claim 1, wherein said treating comprises increasing the hydrophilicity of said gasket.

28. **(Previously Presented)** The method of Claim 1, wherein said treating allows said gasket to form a seal when said backing element is joined to said microarray substrate.

29. (Previously Presented) The method of Claim 1, wherein said treating comprises sequentially contacting said gasket with at least two of: plasma, UV with O₂ and a solvent.

30.-52. (Canceled)

53. **(Currently Amended)** A method for forming an array assay chamber that is sealed by a gasket, said method comprising:

contacting a backing element comprising a gasket with plasma to provide a treated surface of said gasket and a treated surface of said backing element, and

joining said backing element to a microarray substrate to produce an array assay chamber that is sealed by said treated surface of said gasket and comprises at least one addressable array on said microarray substrate, wherein said treated surface of said backing element is exposed to the interior of said array assay chamber.

54. (Canceled)

55. (Previously Presented) The method of Claim 53, wherein said plasma is produced from a gas selected from the group consisting of nitrogen, air, argon, oxygen, nitrous oxide, helium, water vapor, carbon dioxide, methane, and combinations thereof.

56. (Canceled)

57. **(Currently Amended)** A method of using a backing element, wherein said backing element is adapted to join with a microarray substrate and comprises a gasket, comprising:

contacting said backing element comprising said gasket with plasma to provide a treated surface of said gasket and a treated surface of said backing element; and

joining said backing element to a microarray substrate to produce an array assay chamber that is sealed by said treated surface of said gasket and comprises at least one addressable array of said microarray substrate, wherein said treated surface of said backing element is exposed to the interior of said array assay chamber.

58. (Canceled)

59. (Previously Presented) The method of Claim 57, wherein said plasma is produced from a gas selected from the group consisting of nitrogen, air, argon, oxygen, nitrous oxide, helium, water vapor, carbon dioxide, methane, and combinations thereof.

60. (Previously Presented) The method of Claim 57, wherein said surface modifying comprises increasing the hydrophilicity of said gasket.

61. (Previously Presented) The method of Claim 57, wherein said surface modifying allows said gasket to form a seal when said backing element is joined to said microarray substrate.

62. (Previously Presented) The method of Claim 57, wherein said surface modifying comprises sequentially contacting said gasket with at least two of: plasma, UV with O₂ and a solvent.

New Claims:

63. (New) The method of Claim 1, wherein said treating further comprises at least one of: (1) depositing SiO₂ on said gasket, and (2) contacting said gasket with at least one of a liquid phase and a vapor phase.